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99689-00017

Appl. No.: 10/671,735
Amendment Dated December 20, 2006
Reply to Office Action of October 20, 2006

Remarks/Arguments:

Claims 1, 3-7, 9-11, 14-27, and 29-41 are pending in this application. Claims 2, 8, 13, and 28 have been cancelled herein, and claims 36-41 have been previously withdrawn. Thus, claims 1, 3-7, 9-11, 14-27, and 29-35 are currently under consideration.

Claims 1, 7, 11, 12, 15, 22, 27, 33, and 35 have been amended. The amendments to the claims are all supported by the specification as filed. Specifically, each amended claim was amended to include a separate step of adding a second recombinase-free oligonucleotide. Claims 2, 8, 13, and 28 have been cancelled as the subject matter of these claims are embraced by the amended claims. Support for the amendments to the claims resides in the claims as originally filed, as well as the specification at paragraph [0093].

Withdrawn Rejections

The applicants appreciate and acknowledge the withdrawal of rejections as itemized in items 3-5 of the Office Action dated October 20, 2006 (hereinafter "the Office Action"). The applicants further note that while the rejections of claims 22-26 under 35 USC 102 set forth in the Office Action dated May 5, 2006 were not specifically withdrawn, item 2 on page 2 of the Office Action states that "[a]ny rejections not reiterated in this action have been withdrawn" Accordingly, because the rejection under 35 USC 102 was not reiterated with regards to claim 23, it is presumed withdrawn.

NEW GROUNDS OF REJECTIONS**Rejection under 35 USC § 112, first paragraph**

Claims 1-5, 7-21, and 27-35 were rejected under 35 USC 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Office Action alleged that the recitation of "free of recombinase" was not supported in the specification, and thus raised issues of new matter. The Office Action does acknowledge that "the specification does teach adding to the RecA stabilized d-loop complex an annealing oligo that is free of recombinase." Not in acquiescence to the rejection, but in an earnest effort to advance prosecution of this application, the claims have been amended to recite methods consistent with the characterization of the disclosure that is presented in the Office Action. Accordingly, the claims now recite methods that include a step of adding an oligonucleotide that is free of

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recombinase to the stabilized d-loop complex. The Office Action acknowledges that the specification provides direct support for claims reciting this particular arrangement of steps, and thus it is respectfully requested that the rejection of claims 1-5, 7-21, and 27-35 under 35 USC 112, first paragraph, be withdrawn.

Rejection under 35 USC § 103(a) (Sena et al. in view of Bryant et al.)

Claims 1-5, 7-21, 23 and 27-35 are rejected under 35 USC 103(a) as being unpatentable over Sena et al. (USPN 5,670,316) in view of Bryant et al. (PNAS 1985, vol. 82, pp. 297-301). The applicants respectfully traverse this rejection.

As amended, the claims include a separate step of adding a second oligonucleotide to the sample that has been mixed with a first oligonucleotide, with the first oligonucleotide bound by recombinase. The second oligonucleotide added in a separate step is distinguished as free of recombinase. None of the cited art disclose, teach, or suggest this adding step.

The claims are all patentable over the combination of the '316 Patent and Bryant et al. The Office Action suggests that the teaching in Bryant et al. that recA-facilitated renaturation is optimized when the recA to DNA ratio corresponds to about 10-15% coverage of the DNA renders the invention obvious in view of the '316 Patent. Bryant et al. teaches an overall ratio of recA and DNA to optimize renaturation.

The present invention goes well beyond anything disclosed or suggested by Bryant in that the addition of the annealing oligonucleotide is done in a separate step, after recA bound DNA and the target molecule have been incubated together. Bryant et al. teach away from the present invention as they teach an optimum ratio of recA protein on a PER NUCLEOTIDE basis. Specifically, 1 recA protein per 30 nucleotides of single stranded DNA was shown as optimum for ATP-dependent renaturation, while 1 recA protein per 4 nucleotides of single stranded DNA was shown as optimum for the ATP-independent reaction (see Bryant et al. at page 298, second full paragraph). There is no suggestion that in Bryant, or any other art, that the entire annealing oligonucleotide sequence should be introduced in a recombinase-free condition.

Because the claimed processes include steps that were not suggested or taught by the prior art, the claims are in condition for allowance. The teaching that renaturation is

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optimized at particular concentrations or recA is not sufficient to make obvious, when combined with the '316 patent, a process that includes a step of adding recombinase free oligonucleotides. The applicants respectfully request that the rejection of claims 1-5, 7-21, 23 and 27-35 under 35 USC 103(a) over Sena et al. in view of Bryant et al. be withdrawn.

MAINTAINED REJECTION**Rejection under 35 USC § 112, second paragraph**

Claims 22-26 were rejected under 35 USC 112, second paragraph as being indefinite. Claim 22 was amended herein such that it no longer recites the term "substantially" and to provide antecedent basis for "second, recombinase-free oligonucleotide." Accordingly, withdrawal of this rejection is respectfully requested.

Rejection under 35 USC § 102(b), Sena et al.

Claims 22 and 24-26 were rejected under 35 USC 102(b) as anticipated by Sena et al. This rejection was founded in the interpretation of the phrase "does not substantially bind." Claim 22 was amended herein such that it no longer recites this phrase, and instead recites a method including a step of adding a second oligonucleotide, wherein the second oligonucleotide is free of recombinase. For reasons of record, Sena et al. does not disclose, teach, or otherwise suggest a method including this step. Withdrawal of this rejection is respectfully requested.

Double Patenting (10/260,150)

Claims 1-5, 7-26 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-67, 72-78 of copending Application No. 10/260,150. Applicant respectfully submits that should copending Application No. 10/260,150 issue with the same claims as set forth presently, applicant would be willing to file a terminal disclaimer in compliance with 37 CFR 1.321(c). In this regard, Applicant respectfully requests that this rejection be withdrawn.

Conclusion

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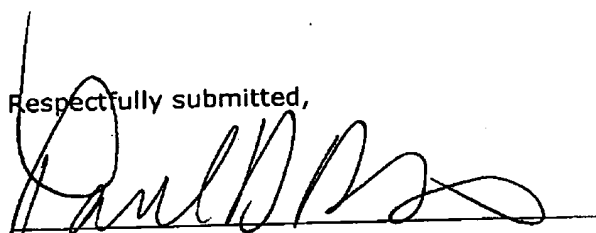
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The foregoing is believed to be fully responsive to this office action. The embodiments presented are believed to be allowable over the prior art of record. Allowance of the claims is respectfully and earnestly requested.

If a telephone conference with the applicants' attorneys would facilitate successful disposition of this case, the Examiner is cordially requested to telephone the undersigned. In the event that any fee has been inadvertently overlooked and is required, the Commissioner is hereby authorized to charge any required fee or credit any overpayment to **Deposit Account No. 50-3570**.

Respectfully submitted,



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